Name:

at1113exam: Expand, factor, and solve quadratics (v210)

1. Expand the following expression into standard form.

$$(6x - 7)(6x + 7)$$

$36x^2 + 42x - 42x - 49$

$36x^2 - 49$

2. Solve the equation.

$$(3x - 5)(4x - 9) \;=\; 0$$

$x = \frac{5}{3}$ $\qquad$ $x = \frac{9}{4}$

3. Expand the following expression into standard form.

$$(2x - 7)^2$$

$4x^2 - 14x - 14x + 49$

$4x^2 - 28x + 49$

4. Expand the following expression into standard form.

$$(5x - 4)(2x - 7)$$

$10x^2 - 35x - 8x + 28$

$10x^2 - 43x + 28$

5. Factor the expression.

$$64x^2 - 49$$

$$(8x + 7)(8x - 7)$$

6. Factor the expression.

$$x^2 + 10x + 16$$

$$(x + 8)(x + 2)$$

7. Solve the equation.

$$12x^2 + 48x + 12 \;=\; 5x^2 - 3x - 2$$

$$7x^2 + 51x + 14 = 0$$
$$(7x + 2)(x + 7) = 0$$
$$x = \frac{-2}{7} \qquad x = -7$$

8. Solve the equation with factoring by grouping.

$$15x^2 - 20x + 18x - 24 \;=\; 0$$

$$(5x + 6)(3x - 4) = 0$$
$$x = \frac{-6}{5} \qquad x = \frac{4}{3}$$